

H-204604

METHOD OF PRODUCING THERMALLY SPRAYED
METALLIC COATING WITH ADDITIVES

ABSTRACT OF THE DISCLOSURE

5 The cylinder walls of light metal engine blocks are thermally
spray coated with a ferrous-based coating including aluminum using an
HVOF device. A ferrous-based wire is fed to the HVOF device to locate a
tip end of the wire in a high temperature zone of the device. Jet flows of
oxygen and gaseous fuel are fed to the high temperature zone and are
combusted to generate heat to melt the tip end. The oxygen is oversupplied
in relation to the gaseous fuel. The excess oxygen reacts with and burns a
fraction of the ferrous-based feed wire in an exothermic reaction to generate
10 substantial supplemental heat to the HVOF device. The molten/combusted
metal is sprayed by the device onto the walls of the cylinder by the jet flow
of gases.

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